

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT E. TOUHSAENT

Appeal No. 1999-0203
Application No. 08/399,384

ON BRIEF

Before GARRIS, WALTZ, and PAWLIKOWSKI, Administrative Patent Judges.
WALTZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the examiner's refusal to allow claims 8, 9, 10, 12, 13, and 16 through 18, as amended subsequent to the final rejection.¹

¹The amendment dated Oct. 27, 1997, Paper No. 14, was entered as per the Advisory Action dated Nov. 18, 1997, Paper No. 15. The amendment filed concurrently with the Brief, dated Jan. 20, 1998, Paper No. 18, has been entered by the examiner although this entry is not confirmed in the record (see the Answer).

Claims 14, 15 and 20, the remaining claims in this application, have been deemed allowable by the examiner since the rejection of these claims is withdrawn (Answer, page 9).

According to appellant, the invention is directed to a polymeric film structure having an enhanced oxygen barrier, where this oxygen barrier is produced by the process of coating at least one side of a polymeric substrate with a solution of poly(vinyl alcohol)("PVOH"), formaldehyde-containing crosslinking agent and crosslinking-promoting acid catalyst at a solution pH of 3.5 or less (Brief, page 3). A copy of illustrative independent claims 8 and 17 is attached as an Appendix to this decision.

The examiner relies upon Knoerzer et al. (Knoerzer), U.S. Patent No. 5,380,586, issued on Jan. 10, 1995, as support for the rejections on appeal (Answer, page 4). Claims 8-10, 12-13 and 16-18 stand rejected under 35 U.S.C. § 102(e) as anticipated by or,

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in the alternative, under 35 U.S.C. § 103 [sic, 103(a)] as obvious over Knoerzer (Answer, page 5). We reverse both of the examiner's rejections for reasons which follow.

OPINION

We first note that the claims are written in two different formats, only one of which has been discussed by the examiner and appellant during the prosecution of this application. Claims 8-10 and 12-16 are written in a product-by-process format while claims 17, 18 and 20 are written as process (of producing a film structure) claims.

It is well settled that the examiner has a lesser burden of proof necessary to establish a *prima facie* case of obviousness in product-by-process claims since the Patent & Trademark Office "is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith." *In re Fessman*, 489 F.2d 742, 744, 180 USPQ 324, 325 (CCPA 1974), quoting from *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972). A rejection under 35 U.S.C. § 103 is indicated where the prior art discloses a product that appears to be either identical with or only slightly different from

the product claimed in a product-by-process claim. See *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980).

"Whether the rejection is based on 'inherency' under 35 U.S.C. [§] 102, on 'prima facie obviousness' under 35 U.S.C. [§] 103, jointly or alternatively, the burden of proof is the same [footnote omitted]." *Id.* If the examiner has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, the examiner can require an applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on. *Id.* Ultimately, it is the patentability of the *products* defined by the product-by-process claims, and not the processes for making them, that must be gauged in light of the prior art. See *In re Wertheim*, 541 F.2d 257, 271, 191 USPQ 90, 103 (CCPA 1976); *In re Fessman*, *supra*; and *In re Brown*, *supra*. Based on the record before us, we determine that the examiner has not established a *prima facie* case for anticipation or obviousness, either for the process claims or with the lesser burden of proof necessary for the product-by-process claims.

The examiner finds that Knoerzer teaches a polymeric film produced by coating a polymeric substrate with PVOH, melamine-formaldehyde crosslinking agent and a sulfuric acid catalyst (Answer, page 5). The examiner further finds that Knoerzer teaches the use of nitric acid as a cross-linking promoting catalyst, although it is "inferior" to sulfuric acid (*id.*). The examiner's conclusion is recited on page 6 of the Answer as follows:

The Examiner has a reasonable basis for believing that the pH of the solution of Knoerger [sic, Knoerzer] may very well meet the claimed pH limitation since both nitric acid and sulfuric acid are strong acids of equivalent strength and since one of ordinary skill in the art would more than likely use the nitric acid in the same content as the sulfuric acid used at col. 4, lines 1-15 [of Knoerzer] and given that the sulfuric acid is a strong acid such would presumably provide a pH falling within the scope of the claims.

As correctly argued by appellant on page 6 of the Brief and page 3 of the Reply Brief, it is well settled that every limitation of the claimed subject matter must be described, either expressly or under the principles of inherency, by the reference to support a rejection under section 102. See *In re King*, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986). According to the examiner's analysis, one of ordinary skill in

the art would first have to use the inferior nitric acid in place of the sulfuric acid catalyst (Answer, page 5). Although such a substitution may be obvious, we do not agree with the examiner that it is expressly described by Knoerzer within the meaning of section 102. Furthermore, the examiner fails to supply any convincing evidence or reasoning for the belief that the pH of the Knoerzer solution would necessarily be the same as recited in the claims on appeal. The examiner has failed to present any convincing evidence or reasoning on this record that nitric acid and sulfuric acid are "equivalent strength" and that one of ordinary skill in the art would have used the same amount of nitric acid as sulfuric acid. Additionally, the examiner has failed to present any convincing evidence or reasoning on this record that sulfuric acid is so strong that it would "presumably" provide a pH within the scope of the claims. In fact, Knoerzer teaches a wide range of amounts of sulfuric acid and that "the sulfuric acid employed can have a strength ranging from about 0.1 to 1.0. molality." See col. 4, ll. 1-15. Accordingly, the pH of the *solution* (see the Brief, page 10; Reply Brief, page 6; and claim 8 on appeal) will vary depending

on the amount and strength of the acid added, as well as the other components of the solution such as the PVOH and the basic crosslinking agent.

With regard to the examiner's rejection based on section 103, the examiner concludes that "it would have been obvious to the skilled artisan to adjust the pH of the solution of Knoerzer via adding more catalyst to the solution so as to increase the crosslinking rate and subsequently drop the pH of the solution." Answer, paragraph bridging pages 6-7. We determine that the examiner has failed to support this conclusion with any convincing evidence or reasoning. If one of ordinary skill in the art wanted to increase the crosslinking rate, one would have used the superior catalyst, i.e., sulfuric acid, instead of nitric acid (see Knoerzer, col. 3, ll. 57-60). Furthermore, the examiner has not provided any reasoning, suggestion or motivation why one of ordinary skill in the art would have wanted to increase the crosslinking rate. See *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Even assuming *arguendo*

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that one of ordinary skill in the art desired to increase the crosslinking rate, the examiner has not provided any convincing evidence or reasoning to support the conclusion that addition of more acid catalyst would effect the desired result.

For the foregoing reasons, we determine that the examiner has not established a *prima facie* case of anticipation or obviousness. Accordingly, the examiner's rejections of the claims on appeal under 35 U.S.C. § 102(e) or § 103 over Knoerzer are reversed.

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The decision of the examiner is reversed.

REVERSED

BRADLEY R. GARRIS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
THOMAS A. WALTZ)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
)	
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)	
BEVERLY A. PAWLIKOWSKI)	
Administrative Patent Judge)	

TAW/jrg

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APPENDIX

8. A polymeric film structure having an enhanced oxygen barrier produced by the process comprising:

coating at least one side of a polymeric substrate adapted for receipt of an oxygen barrier with a solution of poly(vinyl alcohol), formaldehyde-containing crosslinking agent and crosslinking-promoting acid catalyst, said solution having a pH of about 3.5 or less, and

wherein said acid catalyst is selected from the group consisting of phosphoric acid, nitric acid and hydrochloric acid.

17. A method of producing a film structure having an enhanced oxygen barrier layer adhered thereto, comprising:

coating at least one side of a polymeric substrate adapted for receipt of an oxygen barrier with a solution of poly (vinyl alcohol), formaldehyde-containing crosslinking agent and crosslinking-promoting acid catalyst, said solution having a pH of about 3.5 or less, and

wherein said acid catalyst is selected from the group consisting of phosphoric acid, nitric acid and hydrochloric acid.

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